



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/677,569	10/02/2000	Robert G. Schultz	X2009A	6875
7590	06/09/2004		EXAMINER	
James J Ralabate 5792 Main Street Williamsville, NY 14221			HAN, QI	
			ART UNIT	PAPER NUMBER
			2654	14
DATE MAILED: 06/09/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	<i>[Signature]</i>
	09/677,569	SCHULTZ, ROBERT G.	
	Examiner	Art Unit	
	Qi Han	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 19 March 2004.

2a) This action is **FINAL**.                                   2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,4,5,7-19,21,23-25 and 31-33 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,4-5,7-19,21,23-25,31,32-33 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Amendment***

2. This communication is responsive to the applicant's amendment dated 03/19/2004 (Paper 13). Applicant amended claims 1 and 33, and further canceled claims 3 and 32 (see paper13, pages 2-8).

### ***Response to Arguments***

3. Applicant's arguments filed on 3/19/2004 (paper 13) have been fully considered but they are not persuasive.
4. With respect to the Claim Rejections under 35 USC § 103:

In response to applicant's arguments regarding claim 1 (also applying to claim 33) that "the combination of Lambrecht and Simar as argued by the examiner is completely different from the claimed invention" (paper 13, page 10, paragraph 2 through page 11, paragraph 3), the examiner disagrees with applicant's arguments and has a different view of the prior art teachings and the claim language interpretations.

Regarding the applicant's arguments that "the DSP does not work as a slave to the CPU as taught by Lambrecht, but as an interface between the audio input and CPU..." as argued

Art Unit: 2654

(paper 13, page 10, paragraph 2), it is should be pointed that in Lambrecht's invention, the DSP is not limited to only work as a slave to the CPU, at all. It is also pointed that there is no clear line defined to distinguish between a slave device and an interface device in the art, nor in the specification, so that in many cases a slave device is an interface, and vice versa.

Moreover, Regarding the applicant's arguments that "This access process does not perform the same function as the claimed command and control speech engine and cannot be argued to be an equivalent" (paper 13, page 10, paragraph 3), it is noted that the applicant misinterprets the examiner rejection, see detailed exact explanation in the claim rejection in the office action.

In addition, regarding the applicant's arguments that "there is no way to combine Simar's invention with that the CPU to do initial speech processing" and "one of ordinary skilled in the art would not have been motivated to combine the speech processing of ..." (paper 13, page 11, paragraph 2), it is noted that Lambrecht does not limited the CPU to do initial speech processing. As stated in the claim rejection, basically, Lambrecht discloses a computer system comprising motherboard, multimedia devices (including input/output device) (column 11, lines 38-62) that can be used for speech recognition; Simar discloses ASR system having DSP, lexical access (vocabulary) and memory paging, and Hanson suggests using two modes in the speech recognition system (column 28, lines 4-20), so that it would have been obvious to one of ordinary skill in the art at time the invention was made to provide a system of combining the prior art teachings, thus the combined system meets all claimed limitations as rejected (see details in the claim rejection of the office action below). In addition, the rejection also includes

the motivation(s) of the combining references (see details in the claim rejection of the office action below), so that examiner believes that the combined rejection is proper.

***Claim Rejections - 35 USC § 103***

5. Claims 1, 4-5, 7-8, 10, 13-14, 17-19, 21, 23-25, 31 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht et al. (US 5,951,664) hereinafter referenced as Lambrecht, in view of Simar, Jr. et al (US 6,182,203 B1) hereinafter referenced as Simar, and further in view of Hansen et al (US 5,640,490) hereinafter referenced as Hansen.

Regarding **claim 1**, Lambrecht discloses a computer system having a multimedia bus and including improved time slotting and bus allocation, for optimized real-time applications (abstract), comprising:

a computer motherboard architecture comprising: a computer motherboard possessing typical components including a CPU, a data bus, a power interface, and an audio input data pathway, said audio input data pathway connecting the audio input of the motherboard to the CPU, (Fig. 4 and column 11, lines 39-44, 'motherboard 200', 'CPU 102', 'PCI bridge chipset 106 (data pathway)' that connects to the CPU, 'the main memory 110', 'PCI bus', 'Motherboard MM device 147'; Fig. 1, 'multimedia bus 130' (column 11, lines 39-44); Fig. 1 and column 8, lines 31-32 and column 8, lines 31-32, 'input/output device 142-146' and 'multimedia and communication devices', 'audio data... transmitted'; wherein an audio input data pathway is formed by combining some of these components);

a DSP chip in the audio input data pathway, (Fig. 15 and column 8, lines 56-59, 'one or more multimedia devices 142c-146c includes at least one DSP engine 210' for performing 'audio processing functions');

a bridge interfacing between said DSP chip and the bus on the computer motherboard, (Figs. 1 and column 8, lines 22-30, 'the multimedia devices 142-146 include interface circuitry 170 (bridge interfacing)');

a memory in electrical connection to said DSP chip, (column 23, line 23, one or more ROMs or RAMs in the DSP'; Figs. 15 and 17, and column 21, line 3 and column 23, lines 5-6, 'multimedia memory 160'; Fig. 1 and column 11, line 43, 'main memory 110').

Even though Lambrecht discloses that the general purpose DSP engine 210 (Fig. 15) can be programmable to perform audio processing functions and includes one or more ROMs or RAMs which store microcode or instructions corresponding to audio processing instructions or commands (column 23, lines 15-37), which can be interpreted as a command and control **audio engine** reside in the memory of the DSP engine, Lambrecht does not specifically disclose "a command and control **speech engine** residing in said memory of said DSP chip" and "said DSP serves as the preprocessor of all speech input prior to execution of instructions by the CPU to process the speech input" and "wherein said speech engine includes a vocabulary of speech terms enabled to be loaded into said memory which are associated with specific instructions or contextual environments". However, these features are well known in the art as evidenced by Simar, who discloses an automatic speech recognition system (Fig. 97) comprising a speech recognition DSP 709 incorporating a further device 11 (Fig. 1), for executing and appropriately

now known or later developed speech recognition algorithm (speech engine), ROM 713 and RAM 715 support the system for the software wait state on page (inherently load program or data) boundaries provided by the DSP, a lexical access processor 739 (equivalent to a vocabulary) for formulating syllables, words and sentences (speech terms) according to any suitable lexical access algorithm (corresponding to “associated with specific instructions or contextual environment”) (column 93, line 9-46). Simar further shows that input speech must be processed through the function blocks 701 (Simar: Fig. 97), 703, 705, 707, 709 before other CPU or DSP control devices can process the speech input, so that the combined functions blocks or speech recognition DSP 709 can be interpreted as a preprocessor of the input speech, as claimed. Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Lambrecht by specifically providing a speech recognition mechanism (speech engine) as input speech preprocessor including a vocabulary and memory for loading (paging) speech related data, as taught by Simar, for the purpose of handling real-time applications such as speech recognition (Lambrecht: column 1, lines 46-50).

Furthermore, Lambrecht in view of Simar does not expressly disclose that “the DSP is enabled to operate in either command and control mode or continuous speech mode” and “said DSP is operable to be dynamically set by a user in either a continuous speech mode or a command and control mode”. However, these features are well known in the art as evidenced by Hansen, who discloses that the spoken word may be passed as command to the operating system (command and control mode) or application (column 27, lines 48-49), such as a wordprocessor (herein equivalently interpreted as “continuous speech mode”) (column 27, line 47), and that if the Command Processor is not in a command mode (command and control mode), then the word

Art Unit: 2654

will be sent directly to the current application as text (continuous speech mode) (Figs. 4 and 11 and column 28, lines 9-11), which suggests that the two modes in the system can be dynamically set. In addition, Hansen discloses sound recognition circuitry and other circuitry as a preprocessor for performing speech recognition (speech engine) including DSPs, vocabulary, DSP program and data memories (Figs. 1-2, column 1, line 47 through column 2, line 54, and column 4, line 34 through column 6, line 3). Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Lambrecht in view of Simar by specifically providing command and control mode or continuous speech mode for a DSP based speech recognition, as taught by Hansen, for the purpose of offering more computer real-time applications such as speech recognition (Lambrecht: column 1, lines 46-50) and combining speech recognition into other application such as wordprocessor document (Hansen: column 27, lines 46-48).

Regarding **claim 4** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses “a microphone input, means for digitizing an audio input data pathway, and a DSP chip, bridge chip communicating with said bus”, (Lambrecht: Figs. 1 and 15; Simar: Figs. 1 and 97, Hansen: Figs.1-2).

Regarding **claim 5** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses that “said DSP chip is operable to convert said audio input into phonemes”, (Hansen: column 6, line 50 through column 7, line 7, ‘the sound recognition processor 16 (Fig. 1) that includes DSP circuitry 18’; column 5, lines 30-31, ‘extracts the corresponding phoneme sounds’).

Regarding **claim 7** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses that the vocabulary of speech terms resides in the memory in electrical connected to said DSP chip, (Hansen: Fig. 2, memory blocks 40, 42, 48 60, dictionary 82 (vocabulary), buses 38 and 56; Simar: Fig. 97, RAM 115, bus 711 and lexical access 739 that inherently includes a memory for storing a vocabulary).

Regarding **claim 8** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses that the vocabulary of speech terms is able to be defined by a user, either in a static or active mode, (Lambrecht: column 24, lines 39-55, 'user defined dictionary').

Regarding **claim 10** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses that the DSP chip is operable to perform preprocessing for a software-based speech engine residing elsewhere on a computer, (Figs. 15 and 17 and Lambrecht: column 21, line 3 and column 23, lines 5-6, 'multimedia memory 160' (for residing speech engine); Simar: Fig. 97 and column 93, lines 10-20, DSP 709 (perform preprocessing), RAM 115, ROM 713, bus 711, 'software', 'speech recognition algorithm' (software implementation)).

Regarding **claim 13** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses that the DSP chip is enable to function in a command and control speech mode, (Hansen: Fig. 11 and column 27, line 47 to column 28, line 7, 'the spoken word may be passed as command to the operating system' and 'command mode' (command and control mode)).

Regarding **claim 14** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses that the DSP chip is enable to function in a continuous speech mode,

(Hansen: Fig. 11 and column 27, line 47 to column 28, line 7, ‘the spoken word may be input as text directly into an application, such as a wordprocessor document (continuous speech mode)’).

Regarding **claim 17** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses that the computer architectures, comprising motherboard, are personal computer systems that are used for various applications (user-supported features) (Lambrecht: column 1, lines 43-66) that suggests that the corresponding motherboard also has those features, which reads on the claimed “said computer motherboard is a user-supported computer motherboard.”

Regarding **claim 18** (depending on claim 17), Lambrecht in view of Simar in view of Hansen further discloses that the computer architectures are personal computer systems that include various user-operable features (Lambrecht: column 1, lines 43-66) (user-supported computer), and suggest the system has a command mode (Hansen: Figs 11 and column 28, lines 9-11) (corresponding to voice-activated function for the computer), which reads on the claimed “a voice activated used-supported computer”.

Regarding **claims 19 and 21**, Lambrecht in view of Simar in view of Hansen discloses everything claimed, as applied above (see claim 1). Lambrecht further discloses that the computer architectures, comprising motherboard, are personal computer systems (column 1, lines 43-66) that inherently include the conventional portable computers and desktop computers, which reads on the claimed “a portable computer motherboard” (claim 19) and “a desktop computer motherboard” (claim 21).

Regarding **claim 23**, Lambrecht in view of Simar in view of Hansen discloses everything claimed, as applied above (see claim 1). Lambrecht further discloses that the computer

architectures comprising motherboard, are personal computer systems (column 1, lines 43-66), and that the system includes a multimedia bus and various types of multimedia devices including variety of video devices and sound devices (column 8, lines 16-32), so that the motherboard is suitable for video gaming system, which reads on the claimed “said computer motherboard is a video gaming system computer motherboard.”

Regarding **claim 24**, Lambrecht in view of Simar in view of Hansen discloses everything claimed, as applied above (see claim 1). Lambrecht further discloses that the computer architectures comprise motherboard (column 11, line 38) and a multimedia bus and various types of multimedia devices and communication devices (column 8, lines 22-24), so that the motherboard is fully capable of functioning for computing and communication devices, which reads on the claimed “said computer motherboard is a computing and communications device computer motherboard.”

Regarding **claim 25**, Lambrecht in view of Simar in view of Hansen discloses everything claimed, as applied above (see claim 1). Lambrecht further discloses that the computer architectures, comprising motherboard, are personal computer systems that include various user-operable features (column 1, lines 43-66), wherein personal computer inherently includes the conventional portable computers, laptop computers, desktop computers, and the computer with customized hardware and software applications, which reads on the claimed “said computer motherboard is a component of a member selected from the group consisting of user supported computers, laptop computers, desktop computers, portable computers and mixtures thereof.”

Regarding **claim 31**, Lambrecht in view of Simar in view of Hansen discloses everything claimed, as applied above (see claim 1); and further discloses that a speech recognition system

10 (Figs. 1-2) includes sound recognition processor circuit 16 that can identify the phoneme sounds and translates the series of identified phonemes into the corresponding syllable, word or phrase (Hansen: column 5, lines 27-35), and other processor means including DSPs for processing the audio speech signal (Hansen: column 4, line 34 through column 6, line 3), and that the spoken word may be passed as command to the operating system (herein equivalently interpreted as "command mode") (Hansen: column 27, lines 48-49, and Fig. 11), so that at this point the processing need not utilize CPU of host computer (Figs. 1-2), which corresponds to the claimed "when said DSP is operating in command and control mode said DSP is operable to accommodate full interpreting and processing of said speech without said CPU being utilized".

Regarding **claim 33**, it recites a method claim, which corresponds to the apparatus claim 1; the rejection is based on the same reason described for claim 1, because claim 33 recites same or similar limitation(s) and functionality as claim 1.

Regarding **claim 34**, it recites a method claim, which corresponds to the apparatus claim 8; the rejection is based on the same reason described for claim 8, because claim 34 recites same or similar limitation(s) and functionality as claim 8.

6. Claims 9, 12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht in view of Simar in view of Hansen discloses, and further in view of well known prior art (MPEP 2144.03).

Regarding **claim 9**, Lambrecht in view of Simar in view of Hansen discloses everything claimed, as applied above (see claim 1), but fails to expressly disclose that "said vocabulary of speech terms is refreshed by the CPU based upon the context of an application running on a host

processor.” However, the examiner takes official notice of the fact that it was well known in the art to provide a refreshed vocabulary based on an application.

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Lambrecht and Hansen by specifically providing a refreshed vocabulary based on an application, for the purpose of offering more widely marketable features for the product.

Regarding **claim 12**, Lambrecht in view of Simar in view of Hansen discloses everything claimed, as applied above (see claim 1), but fails to specifically disclose that “said DSP chip is enable to perform noise cancellation functions.” However, the examiner takes official notice of the fact that it was well known in the art to provide noise cancellation functions for DSP.

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Lambrecht and Hansen by specifically providing noise cancellation functions for DSP, for the purpose of offering more widely marketable features for real-time applications.

Regarding **claim 15** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses everything claimed, as applied above (see claim 1), but fails to specifically disclose that “said DSP chip is enable to function in a mobile phone mode.” However, the examiner takes official notice of the fact that it was well known in the art to provide a mobile phone function operable for DSP operable for DSP.

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Lambrecht and Hansen by specifically providing a mobile phone

function operable for DSP, for the purpose of offering more widely marketable features for real-time applications.

Regarding **claim 16** (depending on claim 1), Lambrecht in view of Simar in view of Hansen further discloses everything claimed, as applied above (see claim 1), but fails to specifically disclose that "said DSP is enable to function in a language translation mode." However, the examiner takes official notice of the fact that it was well known in the art to provide a language translation function operable for DSP.

Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Lambrecht and Hansen by specifically providing a language translation function operable for DSP, for the purpose of offering more widely marketable features for real-time applications.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lambrecht in view of Simar in view of Hansen, and further Oh et al. (USPN 6,275,806) hereinafter referenced as Oh.

Regarding **claim 11**, Lambrecht in view of Simar in view of Hansen further discloses everything claimed, as applied above (see claim 1). Since the combined system, as stated above (claim 1), has various multimedia input/output devices and can pass the spoken word as command to the operating system or application such as the word processor, which is inherently includes menu selection functions such as operating system provided windowing menu, or application provided object-oriented menu; and the speech recognition with the command mode, which inherently includes speech to signal conversion and voice control features. But,

Lambrecht in view of Simar in view of Hansen fails to specifically disclose that “mobile phone audio functions comprising voice activated dialing and noise cancellation”. However, this feature is well known in the art as evidenced by Oh, who discloses cellular phone (mobile phone) application with speech recognition (column 6, lines 15-34) and voice dialing (column 5, line 29-30), and adaptive noise canceller (ANC) for speech recognition (column 4, lines 2-23). Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Lambrecht in view of Simar in view of Hansen by specifically providing functions of voice activated dialing and noise cancellation for a mobile device, as taught by Oh, for the purpose of offering more widely marketable features for the product.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2654

9. Any response to this office action should be mailed to:  
Commissioner of Patents and Trademarks, P.O. Box 1450, Alexandria, VA22313-1450  
or faxed to:  
(703)-872-9314  
Hand-delivered responses should be brought to:  
Crystal Park II, 2121 Crystal Drive, Arlington, VA. Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (703) 305-5631. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-6954.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

QH/qh  
June 1, 2004



RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER